Canal Current

A wave of information for Cape Coral's Canalwatch volunteers

Newsletter: 4th Quarter 2020

Environmental News

Lake Okeechobee Update

Lake Okeechobee, the largest inland lake in Florida, frequently experiences algae issues due to high nutrients coming from inflows north of the Lake.
Scientists identified 28 different types of algae in Lake Okeechobee, the Caloosahatchee River, and the St. Lucie Canal. Bluegreen algae, or cyanobacteria, is often the dominant organism, such as *Microcystis aeruginosa*, but several other cyanobacteria are known to exist and produce toxins. However, they are often present at lower numbers. The toxins within these cyanobacteria can cause dermal irritation and respiratory distress if blooms are extensive.

Beginning in May 2016, extensive algae blooms persisted on Lake Okeechobee, and continued in varying intensities until the end of July of that year. These algae blooms again reoccurred in 2018 after Hurricane Irma produced abundant rainfall throughout the Florida peninsula the preceding hurricane season.
High Lake water levels during that time resulted in transport of algal-laden water to the Caloosahatchee and St. Lucie estuaries due to regulatory releases. These high-volume discharges, to reduce Lake levels and the threat of flooding for the surrounding communities, equated to lowered salinity levels and enabled blue-green algae to bloom in many of the saltwater canals in Cape Coral.

The strategy of Lake Okeechobee regulatory releases has changed since that time. While every year carries with it the possibility of either a wet or dry weather pattern, the Army Corp of Engineers (USACE) has developed specific strategies based on weather predictions, to determine release schedules to the estuaries.
During the summer of 2020, Florida received much of the rainfall in late summer and fall due to an active hurricane season. Large quantities of rain within the southern part of the state drove the Lake level up to over 16 feet before January of 2021.

To avoid high volume releases for summer of 2021, USACE began a deviation of the LORS schedule to get Lake Okeechobee as close to 12 feet as possible by June 1st. Currently, the Lake level is just above 14 feet, which was accomplished through these releases. A maximum of 2000 cfs to the Caloosahatchee Estuary and up to 500 cfs to the St. Lucie Estuary.
Additionally, the recession rate of Lake Okeechobee has increased this dry season and is anticipated to reach a level of around 13.50 feet by June 1st. The west coast stakeholders, including Cape Coral are

optimistic that high-volume releases from the Lake this rainy season can be avoided. However, sometimes blue-green algae occurrence can be singular and unrelated to upstream conditions. If you believe blue green algae develops at your site, please avoid sampling or touching the water.

Please reach out to ERD staff. We will work closely with Florida Department of Environmental Protection and the Florida Department of Health on reporting sightings and algae sampling.

US Army Corp of Engineers Jacksonville District

As water quality often begins upstream, below are some links to information regarding Lake Okeechobee and its management.

For information regarding the proposed new Lake Okeechobee System Operating Manual (LOSOM) please visit: https://www.saj.usace.army.mil/LOSOM/

For information regarding water management of Lake Okeechobee and water releases to the Caloosahatchee, St. Lucie or south thru the Everglades, please visit: https://www.saj.usace.army.mil/WaterManagement/

For information regarding Everglades restoration projects, please visit: https://www.saj.usace.army.mil/Missions/Environmental/Ecosystem-Restoration/

And for current conditions of the entire Lake Okeechobee watershed, including the Kissimmee Chain of Lakes, the Caloosahatchee and St. Lucie Rivers and the areas south of the lake comprising of the Everglades Agricultural Area, the Stormwater Treatment Areas and the Everglades National Park, please visit:

http://w3.saj.usace.army.mil/h2o/reports/StatusDaily.htm

Questions? Comments? Let us know!

(239)574-0785
Harry: hphillips@capecoral.net
Katie: kmcbride@capecoral.net

Wildlife spotlight: American White Pelican

The American white pelican, one of the largest birds found in North American, is often seen during the fall and spring in southwest Florida, originating from central and northern parts of the continent. Unlike the year-round resident and relative, the brown pelican, white pelicans are first glimpsed while soar high in the atmosphere with a gracefulness not considered common among pelicans. This surprisingly majestic flyer can be seen spiraling (often called a kettle) in the skies above the southwest Florida coast beginning about late November. The white pelican is much large than the brown pelican with huge, orange-yellow bills, large white bodies with black wing tips. On the water though, their behavior is very pelican like, diving headfirst to catch fish they trap in their pouched bills and tipping back their head to swallow the prey whole.

Although the American white pelicans do not consider southern portions of the United States breeding grounds, their frequency, large size and large numbers makes spotting them easy. Sanibel and Captiva Islands are often areas teeming with the white pelican. Especially in the Ding Darling Wildlife Refuge. Closer to Cape Coral, the Matlacha Pass Aquatic Preserve is often a hot spot for this species, particularly in the backwaters around mangrove islands. They can often congregate in ponds as well. The image below is taken from Rotary Park Environmental Center, Cape Coral.

Photo by Honey Phillips

	bd = below detection				benchmark numbers: Marked data are in the highest 20% of values found by Hand et. al, 1988.													
	October 2020						November 2020						December 2020						
	NO2	NO3	NH3	TKN	T-N	T-PO4	NO2	NO3	NH3	TKN	T-N	T-PO4	NO2	NO3	NH3	TKN	T-N	T-PO4	Avg
	<1.0	<1.0	none set		<2.0	<0.46	<1.0	<1.0	none set		<2.0	<0.46	<1.0	<1.0	none set		<2.0	<0.46	TSI
5D							0.03	0.32	0.1	1.0	1.3	0.14	0.03	0.12	0.05	1.1	1.1	0.06	59.65
6F							0.03	0.35	0.1	0.8	1.2	0.14	0.03	0.31	0.05	0.7	0.7	0.07	53.50
7E							0.03	0.37	0.1	1.2	1.6	0.14	0.03	0.33	0.05	1	1.0	0.07	62.21
9H							0.03	0.37	0.1	0.5	0.9	0.12	0.03	0.41	0.1	0.8	0.8	0.05	53.11
9I													0.03	0.36	0.05	0.8	0.8	0.07	56.10
13B							0.03	0.37	0.1	0.8	1.2	0.13	0.03	0.49	0.1	0.4	0.4	0.06	48.49
16E							0.03	0.03	0.2	0.8	0.8	0.03	0.03	0.05	0.1	0.5	0.5	0.01	39.84
16I							0.03	0.05	0.1	0.6	0.7	0.04	0.03	0.06	0.1	0.3	0.3	0.02	41.79
18K							0.03	0.29	0.1	0.9	1.2	0.14	0.03	0.03	0.05	0.6	0.6	0.03	55.33
18L													0.03	0.15	0.05	0.5	0.5	0.05	52.78
18M													0.03	0.03	0.05	1.0	1.0	0.04	59.66
21D							0.03	0.36	0.1	0.8	1.2	0.12	0.03	0.21	0.05	0.4	0.4	0.03	50.15
21I													0.03	0.37	0.1	0.4	0.4	0.03	41.36
24D							0.03	0.03	0.1	0.7	0.7	0.05	0.03	0.03	0.1	0.6	0.6	0.03	48.51
30D													0.03	0.06	0.05	0.4	0.4	0.02	37.59
41B													0.03	0.03	0.1	0.6	0.6	0.02	41.60
44A							0.03	0.09	0.1	0.6	0.7	0.04	0.03	0.11	0.1	0.4	0.4	0.02	43.51
45D							0.03	0.03	0.1	0.7	0.7	0.04	0.03	0.10	0.1	0.4	0.4	0.01	46.41
48A							0.03	0.03	0.1	0.7	0.7	0.02							46.00
58I													0.03	0.03	0.1	0.4	0.4	0.02	44.05

59C													0.03	0.03	0.1	0.4	0.4	0.02	47.47
64H							0.03	0.25	0.05	0.4	0.7	0.10	0.03	0.25	0.05	0.4	0.4	0.06	46.06
69A													0.03	0.07	0.1	1.2	1.2	0.06	58.68
71B							0.03	0.07	0.1	1.3	1.4	0.07	0.03	0.16	0.1	0.6	0.6	0.05	55.78
72C							0.03	0.03	0.05	0.8	0.8	0.07	0.03	0.06	0.1	0.5	0.5	0.04	56.20
74C													0.03	0.07	0.1	0.5	0.5	0.05	39.60
82A							0.03	0.03	0.05	0.8	0.8	0.03	0.03	0.03	0.05	0.4	0.4	0.07	52.89
96A													0.03	0.19	0.05	0.3	0.3	0.01	28.29
Median		**bd**	**#####**	**#####**	**#####**	**#####**		**bd**	**0.10**	**0.80**	**0.80**	**0.07**		**bd**	**0.10**	**0.50**	**0.50**	**0.04**	**48.50**
Max		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.37**	**0.20**	**1.30**	**1.57**	**0.14**		**0.49**	**0.10**	**1.20**	**1.20**	**0.07**	**62.21**

NO2 = Nitrite (inorganic)	TKN = Total Kjeldahl Nitrogen (organic + NH4)
NO3 = Nitrate (inorganic)	TN = Total Nitrogen (inorganic + organic)
NH3 = Ammonia (inorganic)	TP04 = Total Phosphate

All nutrient concentrations shown in mg/L

High levels of nutrients in our canals can indicate the presence of fertilizer runoff or effluent from wastewater or septic systems. Excessive nutrients can lead to nuisance plant growth and algal blooms.

TSI = Trophic State Index, a quick indicator of canal health.
27 sites this quarter scored as GOOD (<60). One site scored FAIR (60-70), and zero scored POOR (>70).
Fourth quarter 2020 water quality took a slight dip in TSI values for November, due in part because of the increased tropical activity late in the 2020 hurricane season. However, TSI values made a quick rebound in December with the onset of dryer conditions. By the beginning of the new year, many canals began to exhibit excellent water clarity and increased salinities for the tidal areas for the start of the dry season. All but one site received "good" TSI values. This reflects that many sites recorded ideal Secchi disk values (such as greater than depth) for the December 2020 sampling day. None of the sites registered as poor.

For up to date City of Cape Environmental Resources Division water quality date visit
https://www.capecoral.net/department/public_works/quarterly_water_quality_reports.php

Native Plant Profile

Black-eyed Susan
Rudbeckia hirta

The black-eyed Susan is a common wildflower to the much of North America. It is widespread throughout the lower 48, as well as Canada and Alaska. Depending on the soil conditions, black-eyed Susan can last as a perennial, biennial or annual. For Florida environments they are typically annual or perennial. When the bright-yellow, daisy-like flowers with dark centers appear, there is no mistaking the black-eyed Susan and the onset of spring. The black-eyed Susan typically does its best in wetter soils and is often found brightening up roadside ditches or along community ponds.

In preserve areas and in its natural setting, the black-eyed Susan is at home in wet prairies and the fringes of wetlands and swamps. Because of its tendency to do better in moist soils, the black-eyed Susan is ideal in low areas in residential landscapes, but don't expect year-round blooms. Nonetheless, when springtime arrives, so do the bright yellow blooms of the black-eyed Susan. If soil conditions are right, a second bloom may occur in the fall.

City of Cape Coral
Environmental Resources Division
C/O Canalwatch Volunteer Program
P.O. Box 150027
Cape Coral, FL 33915